



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

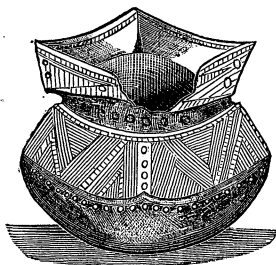
JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

THE
AMERICAN NATURALIST,
AN ILLUSTRATED MAGAZINE
OF
NATURAL HISTORY.

EDITED BY
A. S. PACKARD, JR. AND F. W. PUTNAM.

R. H. WARD,
ASSOCIATE EDITOR, DEPARTMENT OF MICROSCOPY.

VOLUME VI.



SALEM, MASS.
PEABODY ACADEMY OF SCIENCE.
1872.

Entered, according to Act of Congress, in the year 1872, by the
PEABODY ACADEMY OF SCIENCE,
in the Office of the Librarian of Congress, at Washington.

PRINTED AT
THE SALEM PRESS, F. W. PUTNAM & CO.,
Salem, Mass.

CONTENTS OF VOLUME VI.

| | Page |
|--|----------|
| CONCERNING DEEP SEA DREDGINGS. By Prof. L. Agassiz, . . . | 1 |
| THE BLIND FISHES OF MAMMOTH CAVE AND THEIR ALLIES. <i>Illustrated by two plates and cuts.</i> By F. W. Putnam, | 6 |
| A NEW ERECTING* ARRANGEMENT, ESPECIALLY DESIGNED FOR USE WITH BINOCULAR MICROSCOPES. By R. H. Ward, M.D., . . . | 30 |
| THE RATTLESNAKE AND NATURAL SELECTION. By Prof. N. S. Shaler, | 32 |
| THE MOUNTAINS OF COLORADO. By J. W. Foster, LL.D., . . . | 63 |
| IRRIGATION AND THE FLORA OF THE PLAINS. By Rev. E. L. Greene, . . . | 76 |
| THE FORMER RANGE OF THE BUFFALO. By John G. Henderson, . . . | 79 |
| THE BREATHING PORES OF LEAVES. <i>With plate.</i> By Prof. T. D. Biscoe, | 129 |
| AQUEOUS PHENOMENA OF THE PRAIRIES. By Prof. H. W. Parker, . . . | 133 |
| REMARKS ON UNIFORMITY OF NOMENCLATURE IN REGARD TO MICROSCOPICAL OBJECTIVES AND OCULARS. By R. H. Ward, M.D., . . | 137 |
| THE STONE AGE IN NEW JERSEY. <i>Illustrated.</i> By Charles C. Abbott, M.D., | 144, 199 |
| THE USE OF AMPHIPLEURA PELLUCIDA AS A TEST OBJECT FOR HIGH POWERS. <i>With a plate.</i> By Dr. J. J. Woodward, U.S.A., . . . | 193 |
| WHAT IS TRUE TACONIC? By Prof. J. D. Dana, | 197 |
| HINTS ON HERBORIZING. By Dr. A. H. Curtiss, | 257 |
| USE OF THE RATTLES OF THE RATTLESNAKE. By J. G. Henderson, . . . | 260 |
| ORNITHOLOGICAL NOTES FROM THE WEST. By J. A. Allen. | |
| PART I. NOTES ON THE BIRDS OF KANSAS, | 263 |
| PART II. NOTES ON THE BIRDS OF COLORADO, | 342 |
| PART III. NOTES ON THE BIRDS OF THE GREAT SALT LAKE VALLEY, | 394 |
| DIRECTIONS FOR COLLECTING MICROLEPIDOPTERA. By Lord Walsingham, | 275 |
| INSTRUCTIONS FOR PREPARING BIRDS' EGGS. By William Wood, . . . | 281 |
| RELATIONSHIP OF THE AMERICAN WHITE-FRONTED OWL. By Robert Ridgway, | 283 |
| ONE OF OUR COMMON MONADS. <i>Illustrated.</i> By Prof. Albert H. Tuttle, | 286 |
| STUDENTS' MICROSCOPES. By R. H. Ward, M.D., | 321 |
| HIBERNATION OF THE JUMPING MOUSE. By Prof. Sanborn Tenney, . . . | 330 |
| THE WHITE COFFEE-LEAF MINER. <i>With plate.</i> By B. Pickman Mann, | 332, 596 |
| THE FEDIAS OF THE NORTHERN UNITED STATES. <i>Illustrated.</i> By Prof. Thomas C. Porter, | 385 |
| MIMICRY IN THE COLORS OF INSECTS. By Dr. H. Hagen, . . . | 388 |

| | |
|--|---------------|
| VISIT TO THE ORIGINAL LOCALITY OF THE NEW SPECIES OF ARCEUTHOBIUM IN WARREN COUNTY, N.Y. By C. C. Parry, M.D., | 404 |
| ON THE WYANDOTTE CAVE AND ITS FAUNA. <i>Illustrated.</i> By Prof. E. D. Cope, | 406 |
| A NEW ENTOZOON FROM THE EEL. <i>Illustrated.</i> By Rev. Samuel Lockwood, Ph.D., | 449 |
| ON THE USE OF MONOCHROMATIC SUNLIGHT, AS AN AID TO HIGH- POWER DEFINITION. By Dr. J. J. Woodward, U.S.A., | 454 |
| SOME OF THE FAMILIAR BIRDS OF INDIA. By Rev. H. J. Bruce, . | 460 |
| THE CURIOUS HISTORY OF A BUTTERFLY. By Samuel H. Scudder, | 513 |
| ON THE GEOLOGY OF THE ISLAND OF AQUIDNECK AND THE NEIGH- BORING PARTS OF THE SHORES OF NARRAGANSET BAY. <i>With a</i> <i>plate.</i> By Prof. N. S. Shaler, | 518, 611, 751 |
| THE NEW IMMERSION ILLUMINATION. <i>Illustrated.</i> By R. H. Ward, M.D., | 528 |
| ON THE CAUSE OF DETERIORATION IN SOME OF OUR NATIVE GRAPE-VINES, AND ONE OF THE PROBABLE REASONS WHY EUROPEAN VINES HAVE SO GENERALLY FAILED WITH US. <i>Illustrated.</i> By Prof. C. V. Riley, | 532, 622 |
| SEQUOIA AND ITS HISTORY. By Prof. Asa Gray, | 577 |
| ON THE OCCURRENCE OF FACE URNS IN BRAZIL. <i>Illustrated.</i> By Prof. Charles Fred. Hartt, | 607 |
| NOTES ON ABORIGINAL RELICS KNOWN AS "PLUMMETS." <i>Illus- trated.</i> By John G. Henderson, | 641 |
| CONTRIBUTIONS TO THE NATURAL HISTORY OF THE VALLEY OF QUITO. No. III. By Prof. James Orton, | 650 |
| NOTES ON THE VEGETATION OF THE LOWER WABASH VALLEY. By Robert Ridgway, | 658, 724 |
| FOSSIL INSECTS FROM THE ROCKY MOUNTAINS. By Samuel H. Scudder, | 665 |
| THE GEOLOGICAL AGE OF THE COAL OF WYOMING. By Edward D. Cope, A.M., | 669 |
| EFFECTS OF EXTRAORDINARY SEASONS ON THE DISTRIBUTION OF ANIMALS AND PLANTS. By Prof. N. S. Shaler, | 671 |
| THE BALTIMORE ORIOLE AND CARPENTER-BEE. By Rev. Samuel Lockwood, Ph.D., | 721 |
| THE CALIFORNIAN TRIVIA AND SOME POINTS IN ITS DISTRIBUTION. <i>Illustrated.</i> By Robert E. C. Stearns, | 732 |
| THE ALPINE FLORA OF COLORADO. By Rev. E. L. Greene, . . . | 734 |
| CERTAIN PECULIARITIES IN THE CRANIA OF THE MOUND-BUILDERS. <i>Illustrated.</i> By J. W. Foster, LL.D., | 738 |
| ON THE RELATION BETWEEN ORGANIC VIGOR AND SEX. By Prof. Henry Hartshorne, | 747 |

REVIEWS AND BOOK NOTICES.—Norwegian Zoology, p. 37. New Gala-
pagos Birds, p. 38. Recent British Ostracodes, p. 38. The American
Entomologist, p. 39. The Fossil Plants of Canada, p. 99. Anthropolog-

ical Institute of New York, p. 103. A new Catalogue of Butterflies, p. 160. Topographical Atlas of Massachusetts, p. 163. Two Late American Papers on Ornithology, p. 165. Siebold's Parthenogenesis, p. 229. Ethnography of the Shores of Behring Sea, p. 230. Early Stages of Dragon Flies, p. 230. The Lens, p. 231. Geological Survey of Ohio, p. 289. The Noxious and Beneficial Insects of Missouri. *Illustrated*. p. 292. Pond Life, p. 295. Deep Sea Corals. *Illustrated*. p. 295. Views of the Microscopic World, p. 352. Revision of some of the American Butterflies, p. 354. Birds of Kansas, p. 359. Newton's Ornithological Register, p. 361. Vegetable Parasites as Causes of Disease, p. 422. Scientific Record, p. 471. The Boston Society's Ornithological Catalogue, p. 472. Description of a Specimen of *Balanoptera musculus*, p. 473. The Habits of the Orca, p. 474. How Plants Behave, p. 475. Ornithological Works in Prospect, p. 478. Prof. Snow's List of Kansas Birds, p. 482. Catalogue of the Penguins in the Museum of the Boston Society of Natural History, p. 545. Notes on the Natural History of Fort Macon, N. C., and Vicinity, p. 546. Giebel's Thesaurus, p. 549. Recent Discoveries in Ornithotomy, p. 631. Guide to the Study of Insects, p. 635. The Desmids, p. 635. Corals and Coral Islands, p. 674. Man in the Past, Present and Future, p. 680. The Birds of the Tres Marias and Socorro Islands, p. 681. The Evolution of Life, p. 760. Illustrations of North American Moths, p. 762. Fourth Report of the Peabody Academy of Science, p. 764. Birds of Kansas, p. 765.

BOTANY.—Dismissal of the late Botanist of the Department of Agriculture, p. 39. Potatoes Growing above Ground, p. 45. *Helenium tenuifolium*, p. 45. On Utility in the Superabundance of Seeds and Pollen, p. 104. Plant Driers, p. 107. Late Flowering of the Gibbous Bladderwort, p. 108. New American Variety of *Asplenium filix fœmina*, p. 108. Influence of Green Light on the Sensitive Plant, p. 108. Structure of the Closed Flowers of *Impatiens*, p. 109. New Parasitic Plant of the Mistletoe Family, p. 166. Floral Curiosity, p. 167. E. Hall's Collection of Dried Plants of Oregon, p. 167. Dispersion of Spores, p. 168. Dispersion of Seeds by the Wind, p. 231. Mimicry in Plants, p. 233. *Nardosmia palmata*, p. 233. Prof. Babington on *Anacharis*, p. 297. Another Double Wild Flower, p. 289. The Geographical Distribution of *Compositæ*, p. 361. The Coloring Matter of Fungi, p. 361. New Stations of Rare Plants, p. 362. Exuberance of Pollen, p. 426. Double Flowers of *Ranunculus rhomboideus*, p. 427. *Quercus alba*, var. *Gunnisonii*, p. 427. The Formation of Ozone by Flowers, p. 428. *Juniperus occidentalis*, p. 428. Wild Double-flowered *Epigæa repens*, p. 429. Experiments on Hybridization, p. 429. Calypso, p. 429. Botany Forty Years ago, p. 485. Moosewood Fibre, p. 487. *Obione Suckleyana* Torrey, p. 487. Botanical Notabilia, p. 487. Correction, p. 487. Acclimatization of Plants, p. 551. Effects of the Eruption of Vesuvius on Vegetation, p. 551. *Lemna polyrrhiza*, p. 636. New Botanical Works, p. 636. Law of Angular Divergence in the Branches of Plants, p. 682. Classification of the Gray Pine, p. 684. The Vegetable

Nature of Diatoms, p. 684. Office of Bud Scales, etc., p. 685. Seeds as Projectiles, p. 685. Alpine Flowers, p. 686. Fertilization of *Yucca* by a Moth, p. 765. Trees and Rain, p. 766. *Acer nigrum* with Stipules, p. 767. A Seaweed New to our Coast, p. 767.

ZOOLOGY.—Carboniferous Reptiles of Ohio, p. 46. Note on the Prairie Dog, p. 46. Ornithological Query, p. 47. Birds found Breeding in the Catskill Mountains, p. 47. Fishes as Surgeons, p. 48. A Sea Bird inland, p. 49. Note on *Hemirhamphus Richardi*? p. 49. Occurrence of the Orchard Oriole in South Carolina, p. 49. Tulip Trees Destroyed by Bark Lice, p. 51. Instinct or Reason in the Robin, p. 52. Laboratory for Marine Zoology, p. 52. Hybrids, p. 53. The Etheostomoids. *Illustrated*. p. 109. Butterfly Notes, 1871, p. 115. Iowa Butterflies, p. 116. Young of the Blind Fish, p. 116. Serpents Warmed by a Lizard, p. 168. Flying Spiders, p. 168. Embryonic Larvæ of Butterflies, p. 169. Propagation of Salmon, p. 170. An Ornithological Blunder, p. 172. Albinism and Melanism, p. 173. Dredgings in the Gulf of St. Lawrence, p. 174. The Origin of Insects, p. 174. Change in the Habits of a Bird, p. 175. Reproduction of Sturgeon, p. 175. Partial Development of Eggs without Fertilization, p. 176. Flora and Fauna of the Azores, p. 176. Circulation in Insects, p. 178. Note of *Icterus Baltimore*, p. 234. Note of *Rana pipiens*, p. 234. Disappearance of the Colorado Potato Beetle at Niles, Michigan, p. 234. Affinities of the Kingcrab, p. 235. Respiration of Fishes, p. 235. The Great Northern Shrike and the English Sparrows, p. 236. Peculiar Coloration in Fishes, p. 237. Duration of Life of the *Danaus Archippus*, p. 237. American Leeches, p. 238. The last of "*Bonasa Jobsii*," p. 300. Ornithological Blunders, p. 303. Vibrations of the Tail in Snakes, p. 304. The Affinities of Crinoids, p. 305. Birds New to the Massachusetts Fauna, p. 306. Error in Darwin's Origin of Species, p. 307. Parthenogenesis among Lepidoptera, p. 308. Naturalization of Salmonidæ, p. 308. Curious Habits of a Snake, p. 309. More about Singing Mice, p. 309. The Music of the Rattlesnake, p. 310. Melanism, p. 310. A Rare Animal, p. 362. Geographical Distribution of *Bassaris astuta*, p. 364. Colorado Potato Beetle, p. 364. Singing Maryland Marmot, p. 365. The Position of the Centre of Gravity in Insects, p. 366. Occurrence of the Scissor-tail Flycatcher in New Jersey, p. 367. Habits of the Young Cuckoo, p. 368. Great Auk, p. 368. Activity of Trout and Salmon, p. 369. The Carolina *Hemirhamphus*, p. 369. Pouched Rat (*Perognatus fasciatus*), p. 369. A Bird New to the United States, p. 370. The Nest, Eggs, and Breeding Habits of *Harporhynchus crissalis*, p. 370. Intelligence in Monkeys, p. 371. New Birds in Southern Illinois, p. 430. The Anæsthetic School, p. 431. Microlepidoptera, p. 432. On the Occurrence of a near Relative of *Ægiothus flavirostris*, at Waltham, Mass., p. 433. A Spike-horn Muledeer, p. 434. Economical Entomology, p. 435. On the Occurrence of *Setophaga picta* in Arizona, p. 436. Zoological Nomenclature, p. 436. The Gregarious Rat of Texas, p. 487. Notes on *Cemistoma*, p. 489. The Rattle of the Rattlesnake, p. 490. Venomous Fish, p. 491. Vitality of

Reptiles, p. 491. Change of Temperature in Water Containing Recently Fertilized Shad Eggs, p. 492. Another Note on the Same, p. 493. Nest and Eggs of *Helminthophaga Luciae*, p. 493. Occurrence of Couch's Fly-catcher in the United States, p. 493. The Food of the Black Bear, p. 493. A New Locality for *Zonites cellarius* Müller, p. 494. The Blind Crayfish, p. 494. Calculi from the Stomach of a Horse, p. 552. Animals of the Mammoth Cave, p. 553. The Opossum, p. 555. Habits of Tropic Birds, p. 557. Geographical Variation, p. 559. Note on the Thread Worm, (*Filaria anhingæ*) found in the Brain of the Snake Bird, p. 560. Viviparous Minnows, p. 561. Tornaria, the young Stage of *Balanoglossus*, p. 636. The Peculiar Coloration of Fishes, p. 637. A New Species of *Passerculus* from Eastern Massachusetts, p. 637. The Zoological Station at Naples, p. 686. Faunal Provinces of the West Coast of America, p. 689. On Zoological Barriers, with Special Reference to South America, p. 690. Absence of Eyes in Classification, p. 691. Vitality and Sex, p. 692. Spike-horned Muledeer, p. 692. The Rattle of the Rattlesnake, p. 693. Flies as a Means of Communicating Contagious Diseases, p. 694. Embryology of *Chelifer* and *Phalangium*. *With cut.* p. 767. Embryology of the Myriopods, p. 768. The Kingbird or Bee Martin, p. 769. *Arachnactis* the Young of *Edwardsia*, p. 770. Swamp Rabbit (*Lepus aquaticus*), p. 771. The Salt Lake Crustacean, p. 771. A colossal Octopus. *With cut.* p. 772. Texas Field Mouse (*Reithrodon Carolinensis*?), p. 772. Marine Crustacea in Lake Michigan. Correction. p. 773. Albino Deer. p. 773.

GEOLOGY.—Geology of the Phosphate Beds of South Carolina, p. 55. Deep Sea Explorations, p. 58. Coal Beds in Panama, p. 59. Geology, etc., in California, p. 117. Origin of the New England Glacier, p. 117. The Chautauqua Mastodon, p. 178. A New Fossil Butterfly, p. 179. A New Cave in Berks Co., Pennsylvania, p. 238. Glaciers in the Rocky Mountains, p. 310. Discovery of an Extinct Gigantic Bird of Prey in New Zealand, p. 312. A Glacial Phenomenon, p. 372. A New Genus of Ungulates, p. 438. Boulders in Coal, p. 439. Food of *Plesiosaurus*, p. 439. New and Remarkable Fossils, p. 495. Oil Creek Petroleum known in the last Century, p. 638. Extinction of Birds in Mauritius, etc., p. 694. The Eocene Genus *Synplotherium*, p. 695. New Land Shells from the Coal Measures, p. 696. The Proboscidiæ of the American Eocene, p. 773. The Armed Metalophodon, p. 774. The Fish-beds of Osino, Nevada, p. 775.

ANTHROPOLOGY.—Scalping, p. 118. Archæological Chronology, p. 118. Flathead Indians, p. 179. Another Lake Village, p. 313. Fossil Man in France, p. 373. A Remarkable Indian Relic, p. 696. The Boomerang, p. 701. Antiquity of Man in France, p. 702. The Antiquity of Man in America, p. 776.

MICROSCOPY.—Angular Aperture, p. 59. Passage of Corpuscles through the Blood-vessels, p. 60. Cutting and Staining Tissues, p. 61. Another

Erector, p. 62. American Microscopical Society of the City of New York, p. 62. Improved Apparatus for Drawing with the Microscope, p. 62. Micro-spectroscope, p. 62. Protoplasmic Life, p. 63. "Power" of Lenses, p. 119. Photographic Micrometer and Goniometer, p. 120. The Diatom Hoax, p. 121. The Red Blood-corpuscle, p. 121. A New Group of Infusoria, 123. Structure of Minute Organisms, p. 123. Pure Water, p. 124. Railway Dust, p. 124. Gases and Vapors in Micro-chemistry, p. 184. Microphotography, p. 185. Curious Varieties of the Liber, p. 185. Lepidopterous Scales, p. 186. Grinding Diamond Points, p. 186. Vitality as Affected by Temperature, p. 187. Microscopical Manipulations, p. 187. Fibres of Flax and Hemp, p. 187. Darwinism and Histology, p. 187. Staining and Cutting Leaves, p. 187. Alternation of Generations in Fungi, p. 187. Preservation of Fresh-water Polyzoa, p. 188. Crystallization of Metals in Electricity, p. 188. Conjugation in Rhizopods, p. 188. Photographing by Black-ground Illumination, p. 188. Cleaning Diatoms, p. 188. Microscopical Structure of the Wax or Bloom of Plants, p. 188. An Improved Mode of Capillary Circulation, p. 239. The New Erecting Arrangement, p. 240. Note on the Above Remarks, p. 241. Oblique Illumination, p. 241. Glycerine in Microscopy, p. 242. Practical Histology, p. 242. Variations in Size of Red Blood-corpuscles, p. 242. Comparative Size of Red Blood-corpuscles, p. 243. Vitality of Organic Germs at High Temperature, p. 243. Object Teaching in Microscopy, p. 243. Size of Blood-discs, p. 243. Raphides and Plant-crystals, p. 244. Respiration in Abranchiate Worms, p. 244. Development of Hydrodictyon, p. 245. The Maltwood Finder, p. 245. The Microscope in the Lecture Room, p. 314. Angular Aperture, p. 315. Preparation and Preservation of Tissues, p. 315. Absorption of Solid Particles, p. 316. Multiplying Species, p. 316. Development of Vegetable and Animal Life, p. 317. The Leucocytes, p. 317. Exogens and Endogens, p. 318. A Conspectus of the Diatomaceæ, p. 318. Photo-micrographs Popularized, p. 318. Deep-sea Life, p. 373. Infusorial Life, p. 374. The Nature of Miasm, p. 374. Eels in Paste, p. 375. The Origin of Guano, p. 375. Arborescent Silver, p. 375. Artificial Fossils, p. 376. Nomenclature of Objectives, p. 376. Corrections to Prof. Tuttle's Paper in *MAY NATURALIST*, p. 378. A New Erecting Prism. *With cuts.* p. 439. Stephenson's Binocular, p. 441. Opaque Illumination under High Powers, p. 441. Collins' Light Corrector, p. 442. Measurement of Angular Aperture, p. 442. Organisms in Chicago Hydrant Water, p. 443. Record of New Fungi, p. 443. Podura Scales, p. 443. The Study of "difficult Diatoms," p. 444. Cells for Mounting Objects, p. 497. The Common Paraboloid as an Immersion Instrument, p. 498. Bichromatic Vision, p. 499. New Arrangement of Spring Clips, p. 499. Single Front Objectives, p. 500. Microscopy at the American Medical Association, p. 500. Structure of Diatoms, p. 500. Origin of Cancerous Deposits, p. 501. The Nerve of the Tooth, p. 501. Misnaming Objectives, p. 502. Nomenclature of Objectives, p. 504. Photo-mechanical Printing, p. 562. Lenses, Dry or Immersion, p. 563. Angular Aperture of Objectives, p. 564. Organisms in Croton Water, p. 565. Distribution and Action of Nerves, p. 565. Crystalline Forms

in Glass, p. 569. The Leucocytes, p. 569. Spontaneous Generation, p. 570. Successive Polarization of Light, p. 638. A Double Erecting Binocular, p. 639. Angular Aperture of the Eye, p. 639. Classification of Microscopic Objects, p. 703. A Life Slide. *Illustrated*. p. 705. To Blacken Brass, p. 706. An Optical Experiment, p. 706. Camphor in Paraffin Lamps, p. 706. Mounting Small Objects in Balsam, p. 707. Bone Dust in Soap, p. 707. The Fresh Water Polype, p. 707. Reproduction of Sponges, p. 707. Multiplication by Budding of Wheel Animalcules, p. 708. Spicules of Sponges, p. 709. Fungous Growth in Shells, p. 776. Advancing Definitions of Objectives, p. 777. Resolution of Nober's Band, p. 777. Photo-mechanical Printing, p. 778. The Submersion Microscope, p. 779. The Micro-pantograph. *With cut*. p. 779. Mounting Tissues in Balsam, 781. Mounting Tissues in Dammar Varnish, p. 781. Logwood Staining Fluid, p. 781. Fungi in Drinking Water, p. 781. Structure of Podura Scales, p. 782. Dry Rot, p. 782.

NOTES.— pp. 63, 124, 189, 246, 318, 378, 445, 505, 570, 639, 709, 782.

ANSWERS TO CORRESPONDENTS.— pp. 256, 320, 384, 447, 512, 576, 640.

EXCHANGES.— p. 192.

BOOKS RECEIVED.— pp. 128, 256, 320, 384, 448, 512, 576, 640, 720, 784.

ERRATA.

Vol. V.— Page 564, line 22, for *ventral* read *dorsal*; line 24, dele *and Donacia*. Page 565, line 8, for *Donacia* read *Telephorus*; line 6 from bottom, for *They are* read *Attelabus is*. Page 566, line 1 from bottom, after *while* insert *Telephorus*. Page 745, line 29, for *Raphidophora maculata* read *Ceuthophilus maculatus*; line 31, for *Raphidophora subterranea* read *Hadenæcus cavernarum*. Page 746, under cut, for *Raphidophora subterranea* read *Hadenæcus cavernarum*. Page 759, line 18, for *Raphidophora* read *Ceuthophilus*; line 23, for *R* read *H*; and for *stygia* read *Ceuthophilus stygius*; line 35, for *R. stygiu* read *Ceuthophilus stygius*.

Vol. VI.— Page 45, line 9 from bottom, for TENNIFOLIUM read TENUIFOLIUM. Page 72, line 10, for *Denver 2105 feet above the sea* read *5105 feet*. Page 136, line 3, for *equivalency* read *equivalence*. Page 138, line 4 of note, for *applications* read *appliances*. Page 140, line 24, for *advertency* read *inadvertency*. Page 141, line 3 from bottom, for *from* read *for*. Page 176, head line, for GEOLOGY read ZOOLOGY. Page 178, head line, for ZOOLOGY read GEOLOGY; line 18, for *Chantauqua* read *Chautauqua*. Page 187, line 18, insert *S.* before *Beale*. Page 192, line 4 from bottom, for 321 read 317. Page 237, line 9 from bottom, for *Damus* read *Danaus*. Pages 286-289, for *Urella* read *Uvella*. Page 286, line 30, for *glauconia* read *glaucoma*. Page 350, line 3, for *Leucosticta griseinucha* read *L. telephrocotis*. Page 327, place § before last note. Pages 327 and 329, in the last square of the upper row insert a comma after *binocular*. Page 374, line 25, for *Dongall* read *Dougall*. Page 515, line 15, for *W. Doubleday* read *Mr. Doubleday*; last line but one, for *even unite their faces* read *ever unite their forces*. Page 516, line 6, for *enclosed* read *eclosed*; line 9, for *there* read *then*; line 16, for *trace* read *traces*.

LIST OF PLATES.

| Plate. | Page. | Plate. | Page. |
|--|-------|--|-------|
| 1-2. Blind Fishes and their Allies, twenty-seven figures, . . . | 29-30 | 5. The White Coffee-leaf Miner (a corrected copy of this plate is also given on page 605), . . | 341 |
| 3. Breathing Pores of Leaves, eighteen figures, | 132 | 6. Diagram Map illustrating the Geology of Island of Aquidneck, | 522 |
| 4. Frustules of <i>Amphipleura pelucida</i> (Woodbury-type), . . | 193 | | |

LIST OF WOODCUTS.

| No. | Page | No. | Page. |
|---|---------|---|---------|
| 1. Cuban Blind Fish, <i>Stygicola dentatus</i> , | 10 | 119-122. <i>Koleops anguilla</i> , | 451-453 |
| 2. Mudfish, <i>Melanura limi</i> , . . | 14 | 123-126. Immersion Illumination, . . | 526-530 |
| 3-8. Representing six genera of Darters, <i>Etheostomoids</i> , 110-112 | | 127. Grape-leaf Galls, | 533 |
| 9-30. Twenty-two figures of Ancient Stone Implements from New Jersey, | 144-160 | 128. Nine figures of the Grape Gall-louse, | 534 |
| 31-87. Fifty-seven figures of Ancient Stone Implements from New Jersey, | 200-227 | 129. Eleven figures of the Grape-root Louse, | 537 |
| 88-92. Five figures of Monads, 286-289 | | 130. <i>Bracon letifer</i> , Parasite of the Coffee Moth, | 599 |
| 93. The Strawberry Crown-borer, Larva and Beetle, | 293 | 131. Ancient Face Urn from Brazil, | 609 |
| 94-95. The Grape <i>Amphipyra</i> , Larva and Moth, | 293 | 132-138. Seven figures of Ancient Stone Implements generally known as Plummets, . . | 643-647 |
| 96-97. The Grape <i>Colaspis</i> , Larva and Beetle, | 293 | 139-142. Four figures of an Ancient Carved Stone found at Lake Winnipiseogee, | 697-750 |
| 98-99. The White-lined Morning Sphinx and Larva, | 294 | 143. Life Slide for the Microscope, . . | 700 |
| 100. A Deep Sea Coral, <i>Haplophyllia</i> , | 296 | 144. <i>Balanophyllia elegans</i> , | 732 |
| 101. Jumping Mouse, <i>Jaculus Hudsonius</i> , | 330 | 145. Shell of <i>Trivia Californica</i> , . . | 732 |
| 102-108. Fruit of the <i>Fedias</i> of the Northern United States, 386-387 | | 146. <i>Trivia Californica</i> , | 733 |
| 109-110. <i>Cæciodotea microcephala</i> , from the Wyandotte Cave, | 411 | 147. <i>Trivia Europæa</i> , | 733 |
| 111-113. <i>Cauloxenus stygius</i> , | 412 | 148. Skull of a Mound-builder from Illinois, | 739 |
| 114-115. <i>Erebomaster flavescens</i> , | 415 | 149. Typical skull of the Mound-building race, | 740 |
| 116. <i>Orconectes inermis</i> , | 419 | 150. Cut showing the comparative size and shape of various skulls, | 745 |
| 1, 2, 3. A New Erecting Prism, | 440 | 151. Chelifer <i>cancroides</i> , | 767 |
| 117-118. <i>Echinorhynchus gigas</i> , | 450 | 152. Brazilian Octopus, | 772 |
| | | 153. Micro-pantograph, | 780 |

LIST OF CONTRIBUTORS TO VOL. VI.

TO GENERAL ARTICLES.

| | |
|---|--|
| Dr. CHARLES C. ABBOTT, Trenton, N. J. | Prof. JAMES ORTON, Poughkeepsie, New York. |
| Prof. L. AGASSIZ, Cambridge, Mass. | Prof. H. W. PARKER, Amherst, Mass. |
| J. A. ALLEN, Cambridge, Mass. | Dr. C. C. PARRY, Davenport, Ohio. |
| Prof. T. D. BISCOE, Cincinnati, Ohio. | Prof. THOS. C. PORTER, Easton, Pennsylvania. |
| Rev. H. J. BRUCE, Springfield, Mass. | F. W. PUTNAM, Salem, Mass. |
| Prof. E. D. COPE, Haddonfield, N. J. | ROBERT RIDGWAY, Washington. |
| Dr. A. H. CURTISS, Liberty, Va. | Prof. C. V. RILEY, St. Louis, Mo. |
| Prof. JAMES D. DANA, New Haven, Connecticut. | S. H. SCUDDER, Mentone, France. |
| J. W. FOSTER, LL.D., Chicago, Ill. | Prof. N. S. SHALER, Cambridge, Massachusetts. |
| Prof. ASA GRAY, Cambridge, Mass. | R. E. C. STEARNS, San Francisco, California. |
| Rev. E. L. GREENE, Greeley, Colo- rado. | Prof. SANBORN TENNEY, Williams- town, Mass. |
| Dr. H. HAGEN, Cambridge, Mass. | Prof. ALBERT H. TUTTLE, Cam- bridge, Mass. |
| Prof. HENRY HARTSHORNE, Phila- delphia, Pa. | Lord WALSINGHAM, Thetford, Eng. |
| Prof. C. FRED. HARTT, Ithaca, N. Y. | Dr. R. H. WARD, Troy, N. Y. |
| JOHN G. HENDERSON, Springfield, Illinois. | Dr. WILLIAM WOOD, East Windsor Hill, Ct. |
| Rev. SAMUEL LOCKWOOD, Keyport, New Jersey. | Dr. J. J. WOODWARD, U. S. Army, Washington, D. C. |
| B. P. MANN, Cambridge, Mass. | |

TO REVIEWS AND BOOK NOTICES.

| | |
|--------------------------------------|--|
| J. A. Allen, Cambridge, Mass. | Prof. J. B. Perry, Cambridge, Mass. |
| Rev. E. C. Bolles, Salem, Mass. | F. W. Putnam, Salem, Mass. |
| Dr. T. M. Brewer, Boston, Mass. | Prof. C. V. Riley, St. Louis, Mo. |
| Dr. Elliott Coues, U. S. Army. | S. H. Scudder, Mentone, France. |
| Dr. H. Hagen, Cambridge, Mass. | Prof. Frank H. Snow, Lawrence, Kansas. |
| J. H. Lintner, Albany, N. Y. | Dr. R. H. Ward, Troy, N. Y. |
| Dr. A. S. Packard, Jr., Salem, Mass. | |

TO MISCELLANY.

- Dr. C. C. Abbott, Trenton, N. J.
 Academy of Natural Sciences of Philadelphia, Penn.
 Alexander Agassiz, Cambridge, Mass.
 Prof. L. Agassiz, Cambridge, Mass.
 J. A. Allen, Cambridge, Mass.
 American Philosophical Society, Philadelphia, Penn.
 Prof. J. C. Arthur, Iowa Agricultural College.
 C. G. Atkins, Augusta, Maine.
 W. W. Bailey, Providence, R. I.
 W. J. Real, Lansing, Mich.
 A. W. Bennett, London, England.
 C. E. Bessey, Iowa State Agricultural College.
 W. G. Binney, Burlington, N. J.
 Prof. T. D. Biscoe, Cincinnati, Ohio.
 J. H. Blake, Cambridge, Mass.
 Richard Bliss, Jr., Cambridge, Mass.
 Wm. Brewster, Cambridge, Mass.
 W. B. Brooks, Suspension Bridge, N. Y.
 California Academy of Sciences, San Francisco.
 V. T. Chambers, Covington, Ky.
 Prof. T. A. Cheney, Leon, N. Y.
 Prof. J. W. Chickering, Jr., Washington, D. C.
 N. Coleman, Otsego, Mich.
 Prof. A. J. Cook, Lansing, Mich.
 Prof. E. D. Cope, Haddonfield, N. J.
 Dr. Elliott Coues, U. S. Army.
 Dr. Jostah Curtis, Knoxville, Tenn.
 W. H. Dall, Alaska.
 Ruthven Deane, Cambridge, Mass.
 T. W. Deering, Leavenworth, Kansas.
 Rev. S. A. L. Drew, South Royalton, Vt.
 Dr. B. D. Eastman, Washington, D. C.
 Wm. Edwards.
 James H. Emerton, Salem, Mass.
 Dr. W. G. Farlow, Cambridge, Mass.
 Lieut. C. Fitzgerald, British Army.
 Dr. Foreman, Baltimore, Md.
 S. W. Garman, Minnesota.
 Prof. Theo. Gill, Washington, D. C.
 Henry Gillman, Detroit, Mich.
 Prof. G. Brown Goode, Middletown, Ct.
 Rev. E. L. Greene, Greeley, Colorado.
- Prof. Asa Gray, Cambridge, Mass.
 Dr. H. Hagen, Cambridge, Mass.
 Prof. S. S. Haldeman, Philadelphia, Penn.
 Dr. H. Hartshorne, Philadelphia, Penn.
 H. H. Hollenbrush, Reading, Penn.
 Prof. Alpheus Hyatt, Salem, Mass.
 Prof. D. S. Jordan, Ithaca, N. Y.
 H. S. Kedney, Camden, S. C.
 Dr. A. Kellogg, San Francisco, Cal.
 I. A. Lapham, Milwaukee, Wis.
 Prof. J. Leidy, Philadelphia, Penn.
 G. Lincecum, Long Point, Texas.
 Rev. Samuel Lockwood, Keyport, N. J.
 Prof. O. C. Marsh, New Haven, Ct.
 C. J. Maynard, Ipswich, Mass.
 Thomas Meehan, Germantown, Penn.
 Lewis Mitchell, Norwich, Ct.
 C. H. Nauman, Volusia Co., Florida.
 Edward Norton, Farmington, Ct.
 Prof. James Orton, Poughkeepsie, N. Y.
 Dr. A. S. Packard, Jr., Salem, Mass.
 Prof. H. W. Parker, Amherst, Mass.
 Prof. G. H. Perkins, Burlington, Vt.
 F. W. Putnam, Salem, Mass.
 Robert Ridgway, Washington, D. C.
 Prof. C. V. Riley, St. Louis, Mo.
 S. H. Scudder, Mentone, France.
 Prof. N. S. Shaler, Cambridge, Mass.
 Dr. H. L. Smith, New York.
 J. Edward Smith, Ashtabula, Ohio.
 Smithsonian Institution, Washington, D. C.
 Charles J. Sprague, Boston, Mass.
 R. E. C. Stearns, San Francisco, Cal.
 Dr. Wm. Stimpson, Chicago, Ill.
 Charles Stodder, Boston, Mass.
 Prof. J. Sullivan, Columbus, Ohio.
 D. J. Tapley, Danvers, Mass.
 Prof. S. Tenney, Williamstown, Mass.
 Robert B. Tolles, Boston, Mass.
 T. Martin Trippie, Orange, N. J.
 Dr. R. H. Ward, Troy, N. Y.
 Prof. B. G. Wilder, Ithaca, N. Y.
 H. Willey, New Bedford, Mass.
 Dr. Wm. Wood, East Windsor Hill, Ct.
 Dr. J. J. Woodward, U. S. A. Med. Mus.
 Prof. J. Wyman, Cambridge, Mass.
 Dr. H. C. Yarrow, Cambridge, Mass.

COPIED FROM.

- Academy*, London.
American Journal of Science and Arts, New Haven.
Annals and Magazine of Natural History, London.
Bulletin of the Essex Institute, Salem.
College Courier, New Haven.
English Mechanic and World of Science, London.
Entomologist's Monthly Magazine, London.
Journal of the Anthropological Institute, New York.
Journal of Botany, London.
Journal of Franklin Institute, Philadelphia.
- Journal of the Quekett Club*, London.
Land and Water, London.
Manchester Guardian, Manchester, Eng.
Medical Record, New York.
Monthly Microscopical Journal, London.
Nature, London.
Pall Mall Budget, London.
Quarterly Journal of Microscopical Science, London.
Report of State Entomologist of Missouri for 1872, St. Louis.
Revue Scientifique.
Science Gossip, London.
Siebold and K  tliker's Zeitschrift.
Spener'sche Zeitung, Berlin.